



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,203	09/03/2002	Robert Frederick Aird	P/ 190-138	2468

2352 7590 12/22/2003

OSTROLENK FABER GERB & SOFFEN  
1180 AVENUE OF THE AMERICAS  
NEW YORK, NY 100368403

EXAMINER

BLOUNT, ERIC

ART UNIT	PAPER NUMBER
----------	--------------

2636

DATE MAILED: 12/22/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/089,203

Applicant(s)

AIRD ET AL.

Examiner

Eric M. Blount

Art Unit

2636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - a. *On page 2, line 7 and line 8, applicant uses the words "digitises" and "digitised". Spelling corrections are required.*
  - b. *Applicant uses the word "behaviour" throughout the application. Spelling corrections are required.*
  - c. *On page 2, line 20, applicant uses the word "is" between the words image and entered.*

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 7, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "edge to volume ratio" in claim 6 is a relative term, which renders the claim indefinite. The term "edge to volume ratio" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 6 provides for the use of an edge to volume ratio, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. Claims 6 and 7 will not be rejected over art because they cannot be understood.

Regarding claim 8, the phrase "optimal parameters" renders the claim indefinite because it is unclear what limitation(s) are set forth by the phrase. Further, it is unclear how parameters are optimally obtained. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 4 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lasenby [5510772].

As for claim 1, Lasenby discloses a flame detection algorithm that processes a sequence of video images, to detect a sequence of images of flames (column 1, lines 13-32).

Regarding claim 3, disclosed is an algorithm for filtering recorded video images so that changes within a well-defined frequency band, characteristic of flame-like

behavior, are registered (column 7, lines 4-22). Lasenby teaches that a parabolic best-fit curve is used to assess whether a detected object is a flame. The curve is applied to the crossing frequency  $v$ , thus filtering out all unwanted frequencies.

As for claim 4, disclosed is an algorithm that classifies changes in a sequence of images between flicker like and non-flicker like behavior (column 6, lines 22-29).

As for claim 8, as best understood, it is inherent that a person would want to use the best set of parameters in this type of algorithm. The best parameters would yield the best indication as to whether a flame or a false alarm was detected.

5. Claims 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Goedeke et. al [5153722].

Regarding claim 2, Goedeke et. al. disclose a fire detection system and algorithm that comprises a video source (column 4, lines 26-28), a frame grabber (column 5, lines 19-21), a processor (column 5, lines 40-41), and a means to trigger an external alarm when a flame is detected (column 4, lines 45-47).

As for claim 4, disclosed is an algorithm that classifies changes in a sequence of images between flicker and non-flicker like behavior (column 5, lines 40-65).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lasenby. Lasenby will be relied upon for the teachings as described above. Lasenby does not disclose a system that includes a frame grabber or an algorithm that yields a binary image of areas of flame like behavior in a sequence of images.

As for claim 2, Lasenby does not mention the use of a frame grabber, however it is well known in the art that frame grabbers are used to digitize images. It would have been obvious to use a frame grabber with Lasenby's invention in order to digitize images. Lasenby teaches the use of a video source (column 2, lines 33-34), a processor (column 3, lines 13-15), and a means for triggering an alarm (column 5, lines 4-6).

As for claim 5, disclosed in Lasenby's invention is an algorithm that converts intensity levels to binary values before filtering (column 5, lines 34-40). These values are then filtered and they yield a binary image of flame like behavior in a sequence of images. It is obvious that the same types of results are desired whether filtering is done before or after converting values to binary form.

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to use a frame grabber to digitize images and to change the order in the steps of Lasenby because detection of a flame would be possible whether values were changed to binary before or after filtering took place. Further, the use and placement of filters can be construed as a design choice. It is well known in the art that

filters can be placed at various points in a process and use various limits to return ideal results.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Though Ganeshan and Chan et. al. were not used in this action, the fire detection systems taught in their inventions were pertinent in the examination of this case.

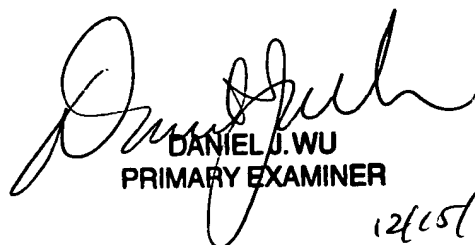
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Blount whose telephone number is 703-305-5042. The examiner can normally be reached on 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 703-305-4717. The fax phone number for the organization where this application or proceeding is assigned is 703-746-9789.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Eric M. Blount  
Examiner  
Art Unit 2636

\*\*\*

  
DANIEL J. WU  
PRIMARY EXAMINER  
12/15/05